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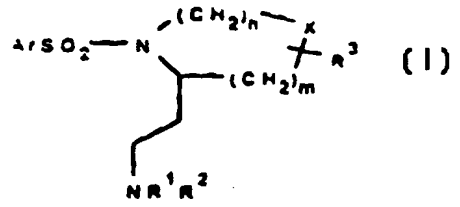
(57) Abstract



(I)

Sulphonamide compounds of formula (I) or a salt thereof, wherein: Ar is an optionally substituted mono- or bicyclic aromatic or heteroaromatic ring; R^1 and R^2 are independently hydrogen, C_{1-6} alkyl, arylC_{1-6} alkyl or together with the nitrogen atom to which they are attached form an optionally substituted 5- to 7-membered heterocyclic ring optionally containing a further heteroatom selected from nitrogen, sulphur or oxygen, the nitrogen atom being substituted by hydrogen, C_{1-6} alkyl, cycloC_{3-7}alkyl, or an optionally substituted aryl, heteroaryl or arylC_{1-6} alkyl group; R^3 is hydrogen or C_{1-6} alkyl; X is oxygen, sulphur or a bond; n is 2 or 3; and m is 1 or 2, having pharmacological activity, processes for their preparation, compositions containing them and their use in the treatment of CNS disorders.

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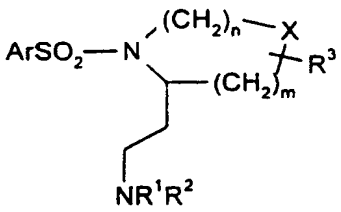
SULPHONAMIDE DERIVATIVES AND THEIR USE IN THE TREATMENT OF CNS DISORDERS

This invention relates to compounds having pharmacological activity, processes for their preparation, to compositions containing them and to their use in the treatment of CNS disorders.

EPA 0 021 580 and EPA 0 076 072 describe sulphonamide derivatives which are disclosed as having antiarrhythmic activity. A structurally distinct class of compounds has now been discovered, which have been found to have $5HT_7$ receptor antagonist activity. $5HT_7$ receptor antagonists are believed to be of potential use in the treatment of certain CNS disorders such as anxiety, depression, sleep disorders, and schizophrenia.

The present invention therefore provides, in a first aspect, a compound of formula (I) or a salt thereof:



(I)

wherein:

Ar is an optionally substituted mono- or bicyclic aromatic or heteroaromatic ring;

R^1 and R^2 are independently hydrogen, C_{1-6} alkyl, arylC_{1-6} alkyl or together with the nitrogen atom to which they are attached form an optionally substituted 5- to 7-membered heterocyclic ring optionally containing a further heteroatom selected from nitrogen, sulphur or oxygen, the nitrogen atom being substituted by hydrogen, C_{1-6} alkyl, cycloC_{3-7}alkyl, or an optionally substituted aryl, heteroaryl or arylC_{1-6} alkyl group;

R^3 is hydrogen or C_{1-6} alkyl;

X is oxygen, sulphur or a bond;

n is 2 or 3: and

m is 1 or 2.

C_{1-6} Alkyl groups, whether alone or as part of another group, may be straight chain or branched.

Optional substituents for aromatic and heteroaromatic groups include C_{1-6} alkyl optionally substituted by NR^7R^8, C_{2-6} alkenyl, C_{2-6} alkynyl,

C_{1-6} alkylthio, cyano, nitro, halogen, CF_3, C_2F_5, NR^7R^8, $CONR^7R^8$, NR^7COR^8, $S(O)_pNR^7R^8$, CHO, OCF_3, SCF_3, COR^9, CH_2OR^9, CO_2R^9 or OR^9 where p is 1 or 2 and R^7, R^8 and R^9 are independently hydrogen, C_{1-6} alkyl, optionally substituted aryl or optionally substituted arylC_{1-6}alkyl. More than one substituent can be present and in the case of multiple substituents these can be the same or different.

Suitably Ar is an optionally substituted mono- or bicyclic aromatic or heteroaromatic ring. Preferably Ar is an optionally substituted naphthyl, phenyl or thienyl group. Most preferably Ar is naphthyl, phenyl or thienyl substituted by one or more halogen, in particular 2,3-di-bromothienyl.

In R^1 and R^2 optional substituents for the heterocyclic rings include C_{1-6} alkyl. Preferably R^1 and R^2 form an optionally substituted 5- to 7-membered heterocyclic ring, in particular an optionally substituted 6-membered ring. Most preferably R^1 and R^2 form a piperidine ring optionally substituted by one or two methyl groups, or R^1 and R^2 form a piperazine ring substituted on nitrogen with an optionally substituted aryl ring.

Preferably R^3 is hydrogen.

Preferably X is a bond.

Preferably n and m have values such that, together with X, they form part of a 5- or 6-membered ring.

Particular compounds of the invention include:
(±)-N-(1-Naphthylsulfonyl)-2-[1-(piperidinyl)ethyl]piperidine,
(±)-N-[(4,5-Dibromo)-thienyl-2-sulfonyl]-2-[1-(piperidinyl)ethyl] piperidine,
1-(2-[1-(Naphthalene-1-sulfonyl)-piperidin-2-yl]-ethyl)-4-pyrid-2-yl piperazine,
1-(2-[1-(Naphthalene-1-sulfonyl)-piperidin-2-yl]-ethyl)-4-phenyl piperazine,
(R)-4-Methyl-1-(2-(1-(3-methylphenylsulfonyl)-pyrrolidin-2-yl)-ethyl)-piperidine
and pharmaceutically acceptable salts thereof.

The compounds of the formula (I) can form acid addition salts with acids, such as conventional pharmaceutically acceptable acids, for example maleic, hydrochloric, hydrobromic, phosphoric, acetic, fumaric, salicylic, citric, lactic, mandelic, tartaric and methanesulfonic.

Compounds of formula (I) may also form solvates such as hydrates, and the invention also extends to these forms. When referred to herein, it is understood that the term 'compound of formula (I)' also includes these forms.

Certain compounds of formula (I) are capable of existing in stereoisomeric forms including diastereomers and enantiomers and the invention extends to each of these stereoisomeric forms and to mixtures thereof including racemates. The different stereoisomeric forms may be separated one from the other by the usual methods, or

any given isomer may be obtained by stereospecific or asymmetric synthesis. The invention also extends to any tautomeric forms and mixtures thereof.

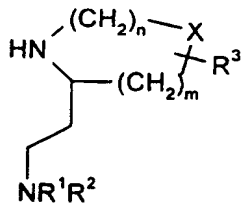
The present invention also provides a process for the preparation of a compound of formula (I) or a pharmaceutically acceptable salt thereof, which process comprises

(a) the coupling of a compound of formula (II):

$$ArSO_2L$$

(II)

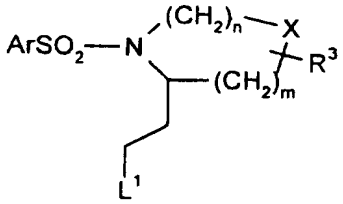
in which Ar is as defined in formula (I) and L is a leaving group with a compound of formula (III):



(III)

in which n, m, X, R^1, R^2 and R^3 are as defined in formula (I);

or (b) the coupling of a compound of formula (IV):



(IV)

in which Ar, n, m, X, and R^3 are as defined in formula (I) and L^1 is a leaving group with a compound of formula (V):

$$HNR^1R^2$$

(V)

and optionally thereafter (a) or (b):

- forming a pharmaceutically acceptable salt.

Suitable leaving groups L and L^1 include halogen, in particular chloro. The reaction of a compounds of formulae (II) and (III) is preferably carried out in an inert

solvent such as dichloromethane optionally in the presence of a base such as triethylamine.

Compounds of formulae (II) and (III) are commercially available or may be prepared according to known methods or analogous to known methods.

Pharmaceutically acceptable salts may be prepared conventionally by reaction with the appropriate acid or acid derivative.

Compounds of formula (I) and their pharmaceutically acceptable salts have 5HT7 receptor antagonist activity and are believed to be of potential use for the treatment or prophylaxis of CNS disorders such as anxiety, depression, sleep disorders, including instances of Circadian rhythym and schizophrenia.

Thus the invention also provides a compound of formula (I) or a pharmaceutically acceptable salt thereof, for use as a therapeutic substance, in particular in the treatment or prophylaxis of the above disorders.

The invention further provides a method of treatment or prophylaxis of the above disorders, in mammals including humans, which comprises administering to the sufferer a therapeutically effective amount of a compound of formula (I) or a pharmaceutically acceptable salt thereof.

In another aspect, the invention provides the use of a compound of formula (I) or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for the treatment or prophylaxis of the above disorders.

The present invention also provides a pharmaceutical composition, which comprises a compound of formula (I) or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

A pharmaceutical composition of the invention, which may be prepared by admixture, suitably at ambient temperature and atmospheric pressure, is usually adapted for oral, parenteral or rectal administration and, as such, may be in the form of tablets, capsules, oral liquid preparations, powders, granules, lozenges, reconstitutable powders, injectable or infusable solutions or suspensions or suppositories. Orally administrable compositions are generally preferred.

Tablets and capsules for oral administration may be in unit dose form, and may contain conventional excipients, such as binding agents, fillers, tabletting lubricants, disintegrants and acceptable wetting agents. The tablets may be coated according to methods well known in normal pharmaceutical practice.

Oral liquid preparations may be in the form of, for example, aqueous or oily suspension, solutions, emulsions, syrups or elixirs, or may be in the form of a dry product for reconstitution with water or other suitable vehicle before use. Such liquid preparations may contain conventional additives such as suspending agents,

emulsifying agents, non-aqueous vehicles (which may include edible oils), preservatives, and, if desired, conventional flavourings or colourants.

For parenteral administration, fluid unit dosage forms are prepared utilising a compound of the invention or pharmaceutically acceptable salt thereof and a sterile vehicle. The compound, depending on the vehicle and concentration used, can be either suspended or dissolved in the vehicle. In preparing solutions, the compound can be dissolved for injection and filter sterilised before filling into a suitable vial or ampoule and sealing. Advantageously, adjuvants such as a local anaesthetic, preservatives and buffering agents are dissolved in the vehicle. To enhance the stability, the composition can be frozen after filling into the vial and the water removed under vacuum. Parenteral suspensions are prepared in substantially the same manner, except that the compound is suspended in the vehicle instead of being dissolved, and sterilization cannot be accomplished by filtration. The compound can be sterilised by exposure to ethylene oxide before suspension in a sterile vehicle. Advantageously, a surfactant or wetting agent is included in the composition to facilitate uniform distribution of the compound.

The composition may contain from 0.1% to 99% by weight, preferably from 10 to 60% by weight, of the active material, depending on the method of administration.

The dose of the compound used in the treatment of the aforementioned disorders will vary in the usual way with the seriousness of the disorders, the weight of the sufferer, and other similar factors. However, as a general guide suitable unit doses may be 0.05 to 1000 mg, more suitably 0.05 to 20.0 mg, for example 0.2 to 5 mg; and such unit doses may be administered more than once a day, for example two or three a day, so that the total daily dosage is in the range of about 0.5 to 100 mg; and such therapy may extend for a number of weeks or months.

When administered in accordance with the invention, no unacceptable toxicological effects are expected with the compounds of the invention.

The following Descriptions and Examples illustrate the preparation of compounds of the invention.

Description 1

2-(2-Chloroethyl)-1-(naphthalene-1-sulfonyl)piperidine (D1)

To a solution of 1-naphthalene sulfonyl chloride (26.64g) in toluene (300 ml) was added 2-piperidine ethanol (8.99g) and diisopropylethylamine (26.8 ml). The mixture was heated to reflux overnight. After cooling to room temperature the solvent was removed *in vacuo* and the residue chromatographed on silica eluting with 50% ethyl acetate and petroleum ether (bp 60-80). The title compound was isolated as an oil, which solidified on standing (12.5g, 53%). MH^+ 338.

2-[1-(naphthalene-1-sulfonyl)-piperidin-2-yl]ethanol the more polar product was isolated as an oil (9.8g, 44%).

Description 2

(R)-2-Hydroxymethyl-pyrrolidine-1-carboxylic acid tert-butyl ester (D2)

To a solution of (R)-2-pyrrolidine methanol (0.19 mol) and di-tert-butyl dicarbonate (0.2 mol) in THF (200 ml) and water (200 ml) was added potassium carbonate until the solution was basic (pH9). The reaction mixture was stirred at room temp. overnight, before partitioning between CH_2Cl_2 and H_2O. The organic phase was dried and concentrated and the residue purified by chromatography on silica gel (32.5g, 84%) MH^+ 202.

Description 3

(R)-2-Methanesulfonyloxy-methyl-pyrrolidine-1-carboxylic acid, tert-butyl ester (D3)

To a solution of (R)-2-hydroxymethyl-pyrrolidine-1-carboxylic acid tert-butyl ester (D2) (0.32 mmol) in dichloromethane (750 ml) at 0°C was added triethylamine (0.36 mol) and methane sulfonyl chloride (0.49 mol). Stirring was continued at 0°C to room temperature for one hour. The reaction mixture was partitioned between CH_2Cl_2 and saturated aqueous $NaHCO_3$. The organic phase was dried and concentrated to afford the title compound (90g, 100%) MH^+ 280.

Description 4

(R)-2-Cyanomethyl pyrrolidine-1-carboxylic acid, tert-butyl ester (D4)

To a solution of (R)-2-methanesulfonyloxy-methyl-pyrrolidine-1-carboxylic acid, tert-butyl ester (D3) (90g, 0.32 mol) in DMF (1200 ml) was added sodium cyanide (24g, 0.49 mol). Heated to 60°C overnight. Reaction mixture was concentrated and partitioned between water and ether. The organic phase was dried and concentrated to give the title compound (18g, 30%) (M-Boc) 110.

Description 5

(R)-2-[2-(4-Methyl-piperidin-1-yl)ethyl]pyrrolidine-1-carboxylic acid, tert-butyl ester (D5)

A solution of (R)-2-cyanomethyl pyrrolidine-1-carboxylic acid, tert-butyl ester (D4) (0.062 mol) and 4-methyl piperidine (0.12 mol) in ethanol (180 ml) was hydrogenated over PtO_2 at 35°C at $3.44 \times 10^5 Nm^{-2}$ for 3 days. The reaction mixture was filtered and concentrated and the residue purified by chromatography on silica gel to afford the title compound (8.6g, 47%) MH^+ 297.

Description 6

(R)-2-[2-(4-Methyl-piperidin-1-yl)ethyl]pyrrolidine (D6)

A solution of the protected amine, (R)-2-[2-(4-methyl-piperidin-1-yl)ethyl]pyrrolidine-1-carboxylic acid, tert-butyl ester (D5) (3.0g, 10 mmol) in trifluoroacetic acid (15 ml) and dichloromethane (50 ml) was heated to reflux for 18 hours. The reaction mixture was concentrated and the residue partitioned between CH_2Cl_2 and sat. aqueous K_2CO_3. The organic phase was dried and concentrated to afford the title compound (2.0g, q) MH^+ 197.

Description 7

(S)-1-Benzyl-2-pyrrolidine acetonitrile (D7)

(S)-1-Benzyl-2-pyrrolidine methanol (10g, 52 mmol) was converted to its mesylate derivative using methane sulfonyl chloride and triethylamine in dichloromethane. Treatment with sodium cyanaide in DMF afforded the title compound (8.9g, 85%) MH^+ 201.

Description 8

(S)-Ethyl-1-benzyl-2-pyrrolidine ethanoate (D8)

(S)-1-Benzyl-2-pyrrolidine acetonitrile (D7) (4.9g, 24 mmol) was converted to its ethyl ester by treatment with hydrogen chloride in ethanol (5.5g, 90%) MH^+ 248.

Description 9

(S)-1-Benzyl-2-pyrrolidine ethanol (D9)

(S)-Ethyl-1-benzyl-2-pyrrolidine ethanoate (D8) (5.5g, 22 mmol) was treated with lithium aluminium hydride to afford the title compound (4.9g, 100%). MH^+ 206.

Description 10

(S)-1-Benzyl-2-(2-(4-methylpiperidine-1-yl)ethyl)pyrrolidine (D10)

(S)-1-Benzyl-2-pyrrolidine ethanol (D9) (4.9g, 22 mmol) was converted to its mesylate using methanesulfonyl chloride and triethylamine in dichloromethane. Treatment with 4-methyl piperidine afforded the title compound (1.1g, 17%) MH^+ 287.

Description 11

(R)-2-(2-Hydroxyethyl)pyrrolidine (D11).

(R)-2-Cyanomethyl pyrrolidine-1-carboxylic acid, tert-butyl ester (D4) was converted to (R)-pyrrolidin-2-yl-acetic acid by treatment with concentrated HCl at reflux. Subsequent reduction with lithium aluminium hydride afforded the title compound.

Description 12

3-Methylphenylsulfonic acid 2-[1-(3-methylphenylsulfonyl)pyrrolidin-2-yl]-ethyl ester (D12)

To a solution of (R)-2-(2-hydroxyethyl)pyrrolidine (D11) (530 mg, 4.6 mmol) in CH_2Cl_2 (50 ml) at 0°C was added diisopropylethyl amine (13.8 mmol) followed by 3-methylphenyl sulfonyl chloride (13.8 mmol). Stirring was continued, allowing the solution to reach room temperature for 24 hrs. The reaction mixture was partitioned between CH_2Cl_2 and saturated aqueous sodium bicarbonate. The organic layer was dried (Na_2SO_4), filtered and concentrated *in vacuo*. The residue was purified by chromatography on silica gel to afford the title compound (530 mg, 27%). MH^+ 424

Description 13

2-Azepan-2-yl ethanol (D13)

The title compound was prepared according to the procedure outlined in US 5175157.

Description 14

2-(2-Chloroethyl)-1-(naphthalene-1-sulfonyl)-azepene (D14)

The title compound was prepared in 56% yield according to the procedure outlined in D1 using 2-azepen-2-yl ethanol and 1-naphthalene sulfonyl chloride. MH^+ 352.

Description 15

3-(2-Chloroethyl)-4-(naphthalene-1-sulfonyl)thiomorpholine (D15)

The title compound (300 mg, 70%) was prepared according to the procedure outlined in D1 using 3-(2-hydroxyethyl)thiomorpholine and 1-naphthalenesulfonyl chloride.

Example 1

(±)-N-(1-Naphthylsulfonyl)-2-[1-(piperidinyl)ethyl]piperidine (E1)

To a stirred solution of 2-[1-(piperidinyl)ethyl]piperidine (196 mg, 1 mmol) and triethylamine (0.14 ml, 1 mmol) in dichloromethane (10 ml) cooled by an ice bath. was added dropwise a solution of 1-naphthalene sulfonyl chloride (226 mg, 1 mmol) in dichloromethane. Stirring continued, allowing the solution to reach room temperature for 24 hours. The solution was washed thoroughly (10% NaOH), and brine, dried (Na_2SO_4) and concentrated *in vacuo* to afford a pale yellow oil (225 mg, 58%) M^+=387.

Example 2

(±)-N-[(4,5-Dibromo)-thienyl-2-sulfonyl]-2-[1-(piperidinyl)ethyl] piperidine (E2)

To a stirred solution of 2-[1-(piperidinyl)ethyl]piperidine (290 mg, 1.47 mmol) and diisopropylethylamine (0.25 ml, 1.47 mmol) in dichloromethane cooled by an ice bath, was added dropwise a solution of 4,5-dibromothiophene-2-sulfonyl chloride (502 mg, 1.47 mmol) in dichloromethane (2 ml). The solution was allowed to warm to room temperature overnight, washed (sat. $NaHCO_3$, brine), dried (Na_2SO_4) and concentrated. The residue was purified by chromatography on silica, eluting with dichloromethane up to 2% methanol/dichloromethane to afford a yellow oil (370 mg, 50%). M^+=499, 501, 503

Example 3

1-(2-[1-(Naphthalene-1-sulfonyl)-piperidin-2-yl]-ethyl)-4-pyrid-2-yl piperazine (E3)

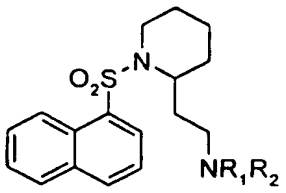
To a solution of 2-(2-chloroethyl)-1-(naphthalene-1-sulfonyl)piperidine (D1) (250 mg) in acetonitrile (20 ml) was added sodium iodide (12 mg), potassium carbonate (108 mg) and 1-(2-pyridyl)piperazine (143 ul). The mixture was heated at reflux overnight. After cooling to room temperature the residue was chromatographed on silica eluting with 5% methanol in dichloromethane to afford the title compound as an oil (301 mg, 87%). Trituration with diethyl ether afforded a foam. MH^+ 465

Example 4

1-(2-[1-(Naphthalene-1-sulfonyl)-piperidin-2-yl]-ethyl)-4-phenyl piperazine (E4)

The title compound (151 mg, 44%) was prepared according to the procedure outlined in Example 3. MH^+ 464

Examples E5-44 were also prepared using the procedure outlined in Example 3 using 2-(2-chloroethyl)-1-(naphthalene-1-sulfonyl)piperidine and an appropriate amine.



Example	NR^1R^2	MH^+
5	Hexamethyleneimine	401
6	cis-2,6-Dimethylpiperidine	415
7	N-Methylbutylamine	389
8	N-Benzylmethylamine	423
9	Pyrrolidine	373
10	1-(4-Benzyl)piperazine	478
11	N-Methylphenethylamine	437
12	Heptamethyleneimine	415
13	Morpholine	389

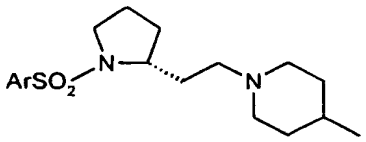
Example	NR^1R^2	MH^+
14	3-Azabicyclo[3.2.2]nonane	427
15	4-(o-Tolyl)piperazine	477
16	4-Phenylpiperidine	463
17	3-Methylpiperidine	401
18	4-Methylpiperidine	401
19	3,3-Dimethylpiperidine	415
20	3,5-Dimethylpiperidine	415
21	Azepine	449
22	cis-Decahydroisoquinoline	441
23	Benzazepine	449
24	4,4-Dimethylpiperidine	415
25	cis-Decahydroquinoline	441
26	4-Benzylpiperidine	477
27	4-Isopropylpiperidine	429
28	Isoindoline	421
29	1,2,3,6-Tetrahydropyridine	385
30	4-tert Butylpiperidine	443
31	3,4-Dimethylpiperidine	416
32	4-(4-Trifluoromethylphenyl)piperazine	491
33	4-Phenethylpiperidine	491
34	4-Phenyl-1,2,3,6-tetrahydropyridine	461
35	4-Trifluoromethylpiperidine	455
36	5-Bromoisoindole	499/501
37	4-Bromoisoindole	499/501
38	4-Phenpropylpiperidine	506
39	5-Phenylisoindole	497
40	4-Phenylisoindole	497
41	4-Cyclohexylethylpiperidine	497
42	2,4-Dimethylpiperidine	415
43	1-(4-Acetyl)piperazine	430
44	1-(4(3'-Trifluoromethylphenyl))piperazine	532

Example 45

(R)-2-[2-(4-Methyl-piperidin-1-yl)ethyl]-1-(naphthalene-1-sulfonyl)pyrrolidine (E45)

To a solution of (R)-2-[2-(4-Methyl-piperidin-l-yl)ethyl]pyrrolidine (D6) 1 mmol and diisopropylethylamine (1 mmol) in dichloromethane (10 mL) at 0°C was added 1-naphthalene sulfonyl chloride. Stirring was continued at room temp. for 12 hours. The solution was washed with 10% aqueous NaOH and brine, dried and concentrated. The residue was purified by chromatography on silica gel to afford the title compound (MH^+ 387).

Examples E46-87 were prepared using the procedure outlined in Example 45 using (R)-2-[2-(4-Methyl-piperidin-l-yl)ethyl]pyrrolidine (D6) and an appropriate aryl sulfonyl chloride.



Example	Ar	MH^+
46	4,5-Dibromo-2-thiophene	499/501/503
47	3,4-Dichlorophenyl	405/407
48	3,4-Dibromophenyl	493/495/497
49	3-Methyl phenyl	351
50	4-Chloro-3-vinylphenyl	397/399
51	3-Bromophenyl	415/417
52	3-(2-Methylphenyl)phenyl	427
53	4-Trifluoromethoxyphenyl	421
54	8-Quinolyl	388
55	4-Bromo-2-trifluoromethoxyphenyl	499/501

Example	Ar	MH^+
56	2,5-bis-(1,1,1-Trifluoroethoxy)phenyl	533
57	2-Trifluoromethoxyphenyl	421
58	2'-(Methoxycarbonyl)phenyl	395
59	3-(Isopropyloxymethyl)	409
60	3-(4-Chlorophenyloxymethyl)	477/479
61	3-Hydroxymethylphenyl	367
62	8-Chloro-1-naphthyl	421/423
63	3-Benzyloxyphenyl	443
64	3-(4'-Bromobenzyloxy)phenyl	521/523
65	3-Hydroxyphenyl	353
66	3-(2-Naphthyl)phenyl	463
67	3-(1-Naphthyl)phenyl	463
68	3-(4-Methoxyphenyl)phenyl	443
69	3-(3,5-bisTrifluoromethylphenyl)phenyl	549
70	3-(3-Trifluoromethylphenyl)phenyl	481
71	3-(2,4,6-Trimethylphenyl)phenyl	455
72	3-(2-Trifluoromethylphenyl)phenyl	481
73	5-Bromo-4-methoxyphenyl	445/447
74	3-Chloro-2-methylphenyl	385/387
75	4-Chloro-2,5-dimethylphenyl	399/401
76	2-Cyanophenyl	362
77	2,5-Dichlorophenyl	405/407/409
78	5-Fluoro-2-methyl	369
79	2,3-Dichlorophenyl	405/407
80	3-(4-Bromobenzyloxy)phenyl	521/523
81	3-Trifluoromethane sulfonyloxyphenyl	485
82	3-Acetoxyphenyl	395
83	3-Methoxyphenyl	367
84	3-(3-Chlorophenyl)phenyl	447/449
85	3-(3-Methoxyphenyl)phenyl	443
86	7-(2-Trifluoroacetyl-1,2,3,4-tetrahydoisoquinoline)	488
87	7-(1,2,3,4-Tetrahydroisoquinoline)	392

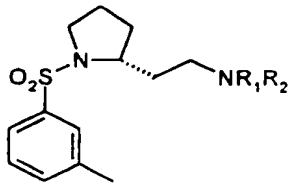
Example 88

(S)-2-[2-Methylpiperidine-1-yl)ethyl)-1-(naphthalene-1-sulfonyl)pyrrolidine (E88)

Hydrogenation of (S)-1-Benzyl-2-(2-(4-methylpiperidine-1-yl)ethyl) pyrrolidine (D10, 300 mg, 1.05 mmol) over palladium hydroxide and treatment of the debenzylated product with 1-naphthalene sulfonyl chloride afforded the title compound (80 mg, 20%) MH^+ 387.

Examples 89-102 were prepared by the following generic procedure

To a suspension of 3-Methylphenylsulfonic acid 2-[1-(3-methylphenylsulfonyl) pyrrolidin-2-yl]-ethyl ester (D12) (1 mmol), potassium carbonate (1 mmol) and sodium iodide (0.1 mmol) in acetone (20 ml) was added a solution of the amine (1 mmol) in acetone (1 ml). The reaction mixtue was heated to reflux for 14 hrs. After cooling to room temp. the solvent was removed *in vacuo* and the residue purified by chromatography on silica gel.



Example	NR^1R^2	MH^+
89	Phenethylamine	373
90	8-(3-Methyl-8-azabicyclo[3.2.1]octane	377
91	8-(3-Hydroxy-8-azabicyclo[3.2.1]octane	379
92	2-(2-Azabicyclo[3.3.1]nonane)	377
93	4-Methylpiperazine	352
94	4-Acetylpiperazine	380
95	4-Ethoxypiperidine	381
96	Thiomorpholine	355
97	Isopropylamine	311
98	3-Methylmorpholine	353
99	3-Oxo-4-methylpiperazine	366
100	4-Acetyl-3-methylpiperazine	394
101	3-Methylpiperazine	352
102	1-(2-Methylhexahydropyridazine)	352

Example 103

2-[2-(4-Methyl-piperidin-1-yl)ethyl]-1-(naphthalene-1-sulfonyl)-azepene (E103)

The title compound was prepared in 77% yield according to the procedure outlined in Examples 5-44 using 4-methyl piperidine and 2-(2-chloroethyl)-1-(naphthalene-1-sulfonyl)-azepene (D14). MH^+ 415.

Example 104

2-(2-[1-(Naphthalene-1-sulfonyl)-azepene-2-yl]ethyl)-1,2,3,4-tetrahydroisoquinoline (E104)

The title compound was prepared in 57% yield according to the procedure outlined in Examples 5-44 using 1,2,3,4 tetrahydroisoquinoline and 2-(2-chloroethyl)-1-(naphthalene-1-sulfonyl)-azepene (D14). MH^+ 449.

Example 105

3-(2-(4-Methylpiperidin-1-yl)ethyl)-4-(naphthalene-1-sulfonyl)thiomorpholine (E105)

The title compound (250 mg, 63%) was prepared according to the procedure outlined in Examples 5-44 using 3-(2-chloroethyl)-4-(naphthalene-1-sulfonyl)thiomorpholine and 4-methylpiperidine. MH^+ 419.

Pharmacological Data

[^{3}H]-5-Carboxamidotryptamine binding to human 5-HT 7 receptor clones expressed in 293 cells *in vitro*.

The affinity of test drugs for the 5-HT 7 receptor binding site can be determined by assessing their ability to displace [^{3}H]-5-carboxamidotryptamine from 5-HT 7 receptor clones expressed in 293 cells (To *et al.*, 1995 and Sleight *et al.*, 1995).

The cells suspension (400µl) was incubated with [^{3}H]-5-carboxamido-tryptamine (0.5nM) in Tris HCl buffer (pH 7.4) at 37^{0}C for 45mins. Non-specific binding was measured in the presence of 5-hydroxytryptamine

(10^{-6}M). Ten concentrations of test drug (10^{-11} to 10^{-5}M final concentration) were added in a volume of 50ul. The total assay volume was 500µl. Incubation was stopped by rapid filtration using a Tomtec cell harvester and radioactivity measured by scintillation counting on a Packard Topcount. The IC_{50} values and pKi values were calculated by INFLEXION, a non-linear iterative curve fitting programme based in EXCEL (Bowen and Jerman, 1994).

Bowen, W. and Jerman, J. (1994). Br. J. Pharmacol.,112, 440P.

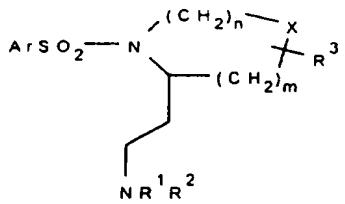
Sleight, A.J., Carolo, C.,Petit, N.,Zweingelstein, C. and Bourson, A. (1995). Mol. Pharmacol.,47, 99.

To, Z.P., Bonhaus, D.W., Eglen, R.M. and Jakeman, L.B. (1995). Br. J. Pharmacol.,15, 107.

All the compounds of examples 1 to 105 showed activity in the above test.

Claims:

1. A compound of formula (I) or a salt thereof:



(I)

wherein:
Ar is an optionally substituted mono- or bicyclic aromatic or heteroaromatic ring;
R^1 and R^2 are independently hydrogen, C_{1-6} alkyl, arylC_{1-6} alkyl or together with the nitrogen atom to which they are attached form an optionally substituted 5- to 7-membered heterocyclic ring optionally containing a further heteroatom selected from nitrogen, sulphur or oxygen, the nitrogen atom being substituted by hydrogen, C_{1-6} alkyl, cycloC_{3-7}alkyl, or an optionally substituted aryl, heteroaryl or arylC_{1-6} alkyl group;
R^3 is hydrogen or C_{1-6} alkyl;
X is oxygen, sulphur or a bond;
n is 2 or 3; and
m is 1 or 2.

2. A compound according to claim 1 in which Ar is optionally substituted naphthyl, phenyl or thienyl.

3 A compound according to any one of claims 1 or 2 in which R^1 and R^2 form an optionally substituted 5- to 7-membered heterocyclic ring.

4. A compound according to any one of claims 1 to 3 in which X is a bond.

5. A compound according to claim 1 which is:
(±)-N-(1-Naphthylsulfonyl)-2-[1-(piperidinyl)ethyl]piperidine,
(±)-N-[(4,5-Dibromo)-thienyl-2-sulfonyl]-2-[1-(piperidinyl)ethyl] piperidine,
1-(2-[1-(Naphthalene-1-sulfonyl)-piperidin-2-yl]-ethyl)-4-pyrid-2-yl piperazine,
1-(2-[1-(Naphthalene-1-sulfonyl)-piperidin-2-yl]-ethyl)-4-phenyl piperazine,
(R)-4-Methyl-1-(2-(1-(3-methylphenylsulfonyl)-pyrrolidin-2-yl)-ethyl)-piperidine
and pharmaceutically acceptable salts thereof.

6. A compound according to any one of claims 1 to 5 for use in therapy.

7. A pharmaceutical composition which comprises a compound according to any one of claims 1 to 5 and a pharmaceutically acceptable carrier or excipient.

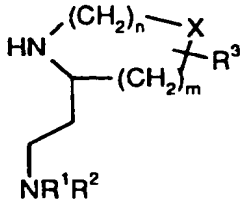
8. A process for the preparation of a compound of formula (I) or a pharmaceutically acceptable salt thereof, which process comprises:

(a) the coupling of a compound of formula (II):

$$ArSO_2L$$

(II)

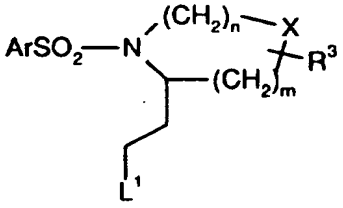
in which Ar is as defined in formula (I) and L is a leaving group with a compound of formula (III):



(III)

in which n, m, X, R^1, R^2 and R^3 are as defined in formula (I);

or (b) the coupling of a compound of formula (IV):



(IV)

in which Ar, n, m, X, and R^3 are as defined in formula (I) and L^1 is a leaving group with a compound of formula (V):

$$HNR^1R^2$$

(V)

and optionally thereafter (a) or (b):

forming a pharmaceutically acceptable salt.

9. Use of a compound of any one of the claims 1-5 for the manufacture of a medicament for treatment of anxiety or depression

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 97/03159

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 C07D211/26 C07D207/09 C07D223/04 C07D279/12 C07D265/30
C07D409/12 C07D401/12 C07D401/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 076 072 A (BEECHAM-WUELFING GMBH &CO.KG) 6 April 1983 cited in the application see claims	1-9
A	EP 0 021 580 A (J. A. WUELFING) 7 January 1981 cited in the application see claims	1-9
A	EP 0 361 791 A (DR.LO. ZAMBELETTI SPA) 4 April 1990 see claims	1-9
P,A	WO 96 33172 A (PFIZER INC.) 24 October 1996 see claims	1-9

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

1

Date of the actual completion of the international search	Date of mailing of the international search report
7 October 1997	13. 10. 97

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Chouly, J

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/EP 97/03159

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 76072 A	06-04-83	AU 8862282 A	31-03-83
		CA 1173443 A	28-08-84
		JP 58065267 A	18-04-83
		US 4485108 A	27-11-84
EP 21580 A	07-01-81	AU 531826 B	08-09-83
		AU 5850180 A	20-11-80
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		DK 215980 A	17-11-80
		JP 56161371 A	11-12-81
		US 4372955 A	08-02-83
		US 4436908 A	13-03-84
		ZA 8002911 A	27-05-81
EP 361791 A	04-04-90	DE 68924751 D	14-12-95
		DE 68924751 T	11-04-96
		JP 2129168 A	17-05-90
		US 5089507 A	18-02-92
WO 9633172 A	24-10-96	AU 5080296 A	31-10-96
		CN 1140165 A	15-01-97
		CZ 9601130 A	13-11-96
		NO 961585 A	21-10-96

****

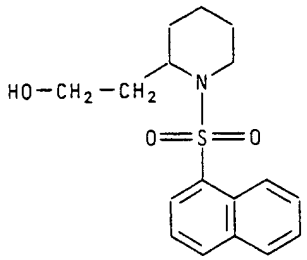
1998:28747 Document No. 128:102009 Heterocyclic sulfonamide derivatives and their use in the treatment of CNS disorders. Forbes, Ian Thomson; King, Francis David; Rahman, Shirley Katherine (Smithkline Beecham PLC, UK; Forbes, Ian Thomson; King, Francis David; Rahman, Shirley Katherine). PCT Int. Appl. WO9748681 A1 971224, 22 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: 97WO-EP03159 970617. PRIORITY: 96GB-0012884 960620.

IT ***201039-22-7P***

(byproduct; prepn. of heterocyclic sulfonamides as 5-HT_7 receptor antagonists)

RN 201039-22-7 ZCAPLUS

CN 2-Piperidineethanol, 1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



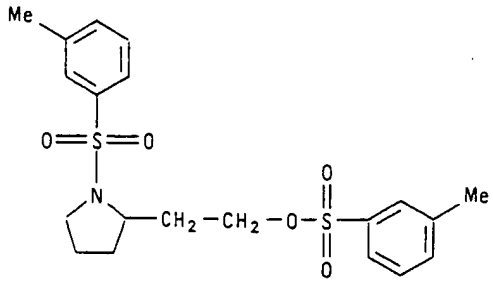
IT ***201039-19-2P***

(intermediate; prepn. of heterocyclic sulfonamides as 5-HT_7 receptor antagonists)

RN 201039-19-2 ZCAPLUS

CN Benzenesulfonic acid, 3-methyl-, 2-[1-[(3-methylphenyl)sulfonyl]-2-pyrrolidinyl]ethyl ester (9CI) (CA INDEX NAME)

RN 201039-19-2 ZCAPLUS



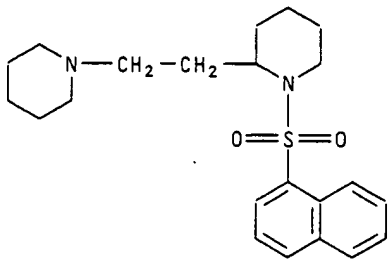
IT ***201038-11-1P*** ***201038-12-2P*** ***201038-13-3P*** ***201038-14-4P*** ***201038-15-5P*** ***201038-16-6P*** ***201038-17-7P*** ***201038-18-8P*** ***201038-19-9P*** ***201038-20-2P*** ***201038-21-3P*** ***201038-22-4P*** ***201038-23-5P*** ***201038-24-6P*** ***201038-25-7P*** ***201038-26-8P*** ***201038-27-9P*** ***201038-28-0P*** ***201038-29-1P*** ***201038-30-4P*** ***201038-31-5P*** ***201038-32-6P*** ***201038-33-7P*** ***201038-34-8P*** ***201038-35-9P*** ***201038-36-0P*** ***201038-37-1P*** ***201038-38-2P*** ***201038-39-3P*** ***201038-40-6P*** ***201038-41-7P*** ***201038-42-8P*** ***201038-43-9P*** ***201038-44-0P*** ***201038-45-1P*** ***201038-46-2P*** ***201038-47-3P*** ***201038-48-4P*** ***201038-49-5P*** ***201038-50-8P*** ***201038-51-9P*** ***201038-52-0P*** ***201038-53-1P*** ***201038-54-2P*** ***201038-55-3P*** ***201038-57-5P*** ***201038-58-6P*** ***201038-59-7P*** ***201038-60-0P*** ***201038-61-1P*** ***201038-62-2P*** ***201038-63-3P*** ***201038-64-4P*** ***201038-65-5P*** ***201038-66-6P*** ***201038-67-7P*** ***201038-68-8P*** ***201038-69-9P*** ***201038-70-2P*** ***201038-71-3P*** ***201038-72-4P*** ***201038-73-5P*** ***201038-74-6P*** ***201038-75-7P*** ***201038-76-8P*** ***201038-77-9P*** ***201038-78-0P*** ***201038-79-1P*** ***201038-80-4P*** ***201038-81-5P*** ***201038-82-6P*** ***201038-83-7P*** ***201038-84-8P*** ***201038-85-9P*** ***201038-86-0P*** ***201038-87-1P*** ***201038-88-2P*** ***201038-89-3P*** ***201038-90-6P*** ***201038-91-7P*** ***201038-92-8P*** ***201038-93-9P*** ***201038-94-0P*** ***201038-95-1P*** ***201038-96-2P*** ***201038-97-3P*** ***201038-98-4P*** ***201038-99-5P*** ***201039-00-1P*** ***201039-01-2P*** ***201039-02-3P*** ***201039-03-4P*** ***201039-04-5P*** ***201039-05-6P*** ***201039-06-7P*** ***201039-07-8P*** ***201039-08-9P*** ***201039-09-0P*** ***201039-10-3P*** ***201411-25-8P*** ***201411-30-5P***

(prepn. of heterocyclic sulfonamides as 5-HT_7 receptor antagonists)

RN 201038-11-1 ZCAPLUS

RN 201038-11-1 ZCAPLUS

CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-(1-piperidinyl)ethyl]- (9CI) (CA INDEX NAME)



RN 201038-12-2 ZCAPLUS

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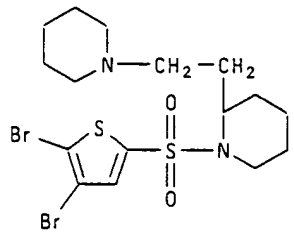

RN 201038-13-3 ZCAPLUS

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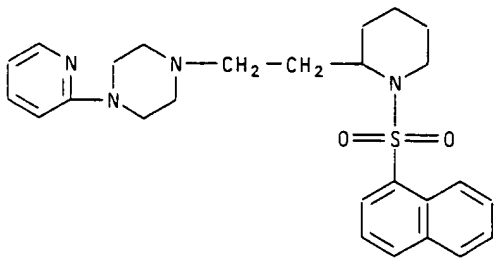
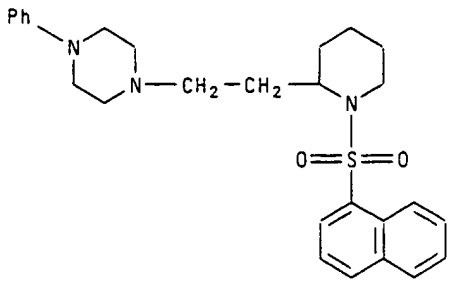


RN 201038-14-4 ZCAPLUS

CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-(4-phenyl-1-piperazinyl)ethyl]- (9CI) (CA INDEX NAME)

RN 201038-14-4 ZCAPLUS



RN 201038-15-5 ZCAPLUS

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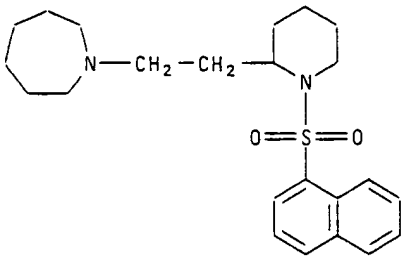
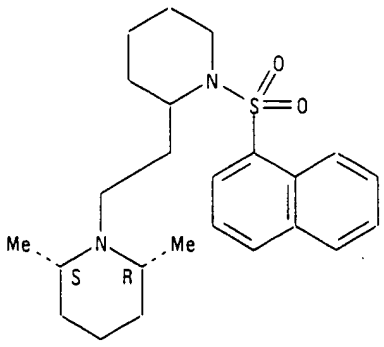


RN 201038-16-6 ZCAPLUS

CN Piperidine, 2-[2-(2,6-dimethyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)-, (2α,6α)-[*partial*]- (9CI) (CA INDEX NAME)

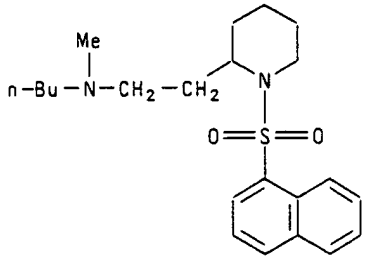
Relative stereochemistry.



RN 201038-17-7 ZCAPLUS

CN 2-Piperidineethanamine, *N*-butyl-*N*-methyl-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

RN 201038-17-7 ZCAPLUS



RN 201038-18-8 ZCAPLUS

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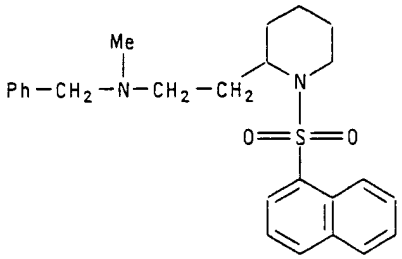
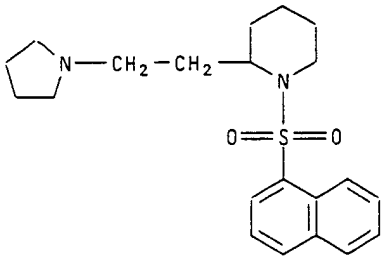


RN 201038-19-9 ZCAPLUS

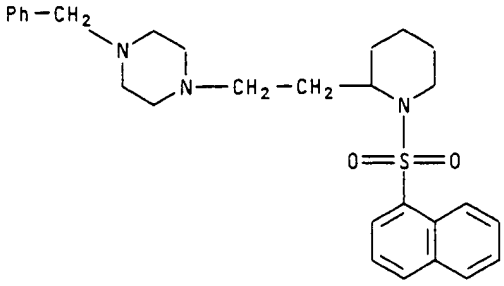
CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-(1-pyrrolidinyl)ethyl]- (9CI) (CA INDEX NAME)



RN 201038-20-2 ZCAPLUS

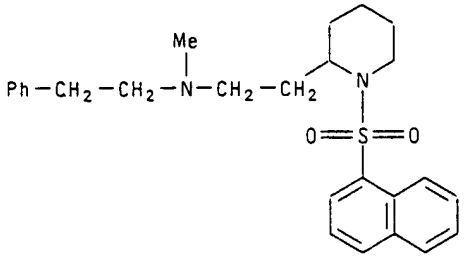
CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-[4-(phenylmethyl)-1-piperazinyl]ethyl]- (9CI) (CA INDEX NAME)

RN 201038-20-2 ZCAPLUS



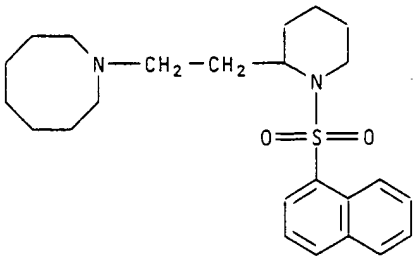
RN 201038-21-3 ZCAPLUS

CN 2-Piperidineethanamine, *N*-methyl-1-(1-naphthalenylsulfonyl)-*N*-(2-phenylethyl)- (9CI) (CA INDEX NAME)



RN 201038-22-4 ZCAPLUS

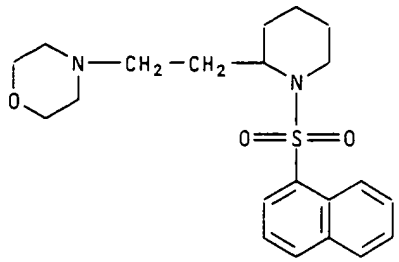
CN Piperidine, 2-[2-(hexahydro-1(2*H*)-azocinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-23-5 ZCAPLUS

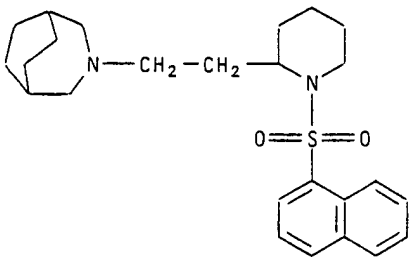
CN Piperidine, 2-[2-(4-morpholinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

RN 201038-23-5 ZCAPLUS



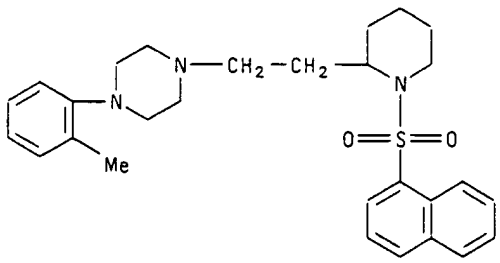
RN 201038-24-6 ZCAPLUS

CN Piperidine, 2-[2-(3-azabicyclo[3.2.2]non-3-yl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-25-7 ZCAPLUS

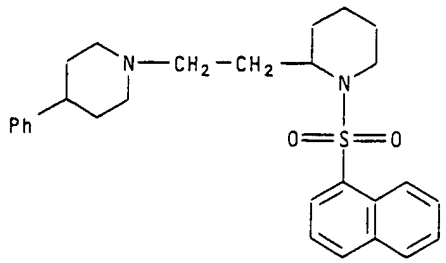
CN Piperidine, 2-[2-[4-(2-methylphenyl)-1-piperazinyl]ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-26-8 ZCAPLUS

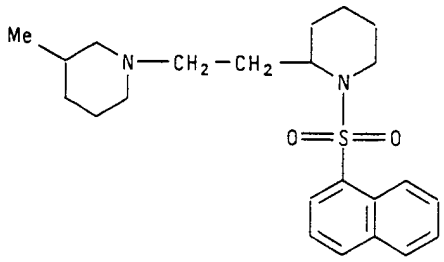
CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-(4-phenyl-1-piperidinyl)ethyl]- (9CI) (CA INDEX NAME)

RN 201038-26-8 ZCAPLUS



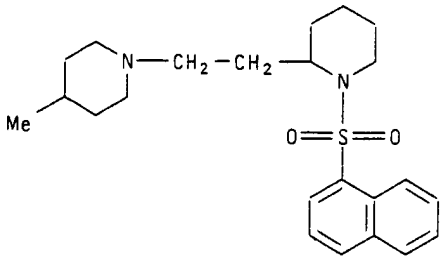
RN 201038-27-9 ZCAPLUS

CN Piperidine, 2-[2-(3-methyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-28-0 ZCAPLUS

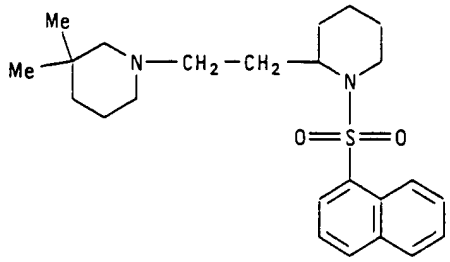
CN Piperidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-29-1 ZCAPLUS

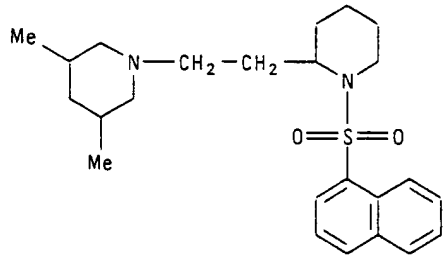
CN Piperidine, 2-[2-(3,3-dimethyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

RN 201038-29-1 ZCAPLUS



RN 201038-30-4 ZCAPLUS

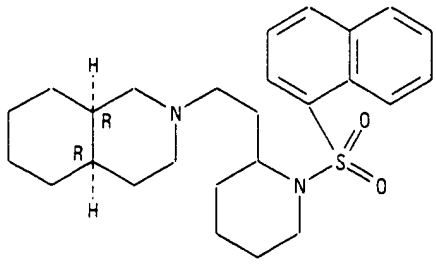
CN Piperidine, 2-[2-(3,5-dimethyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-31-5 ZCAPLUS

CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-(octahydro-2(1*H*)-isoquinolinyl)ethyl]-, (4aα,8aα)-[*partial*]- (9CI) (CA INDEX NAME)

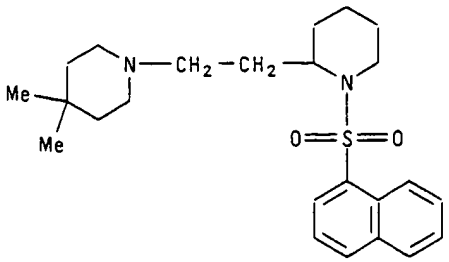
Relative stereochemistry.



RN 201038-32-6 ZCAPLUS

CN Piperidine, 2-[2-(4,4-dimethyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

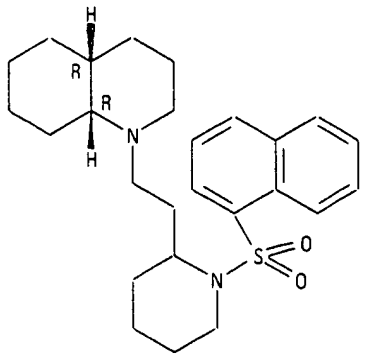
RN 201038-32-6 ZCAPLUS



RN 201038-33-7 ZCAPLUS

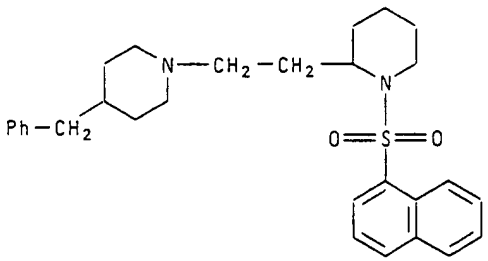
CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-(octahydro-1(2*H*)-quinolinyl)ethyl]-, (4aα,8aα)-[*partial*]- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 201038-34-8 ZCAPLUS

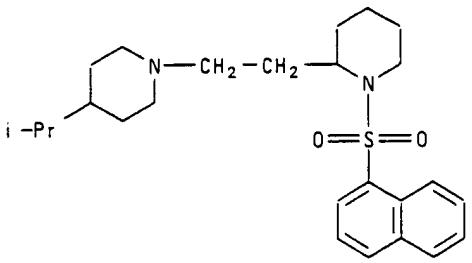
CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-[4-(phenylmethyl)-1-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 201038-35-9 ZCAPLUS

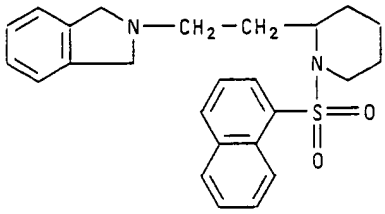
CN Piperidine, 2-[2-[4-(1-methylethyl)-1-piperidinyl]ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

RN 201038-35-9 ZCAPLUS



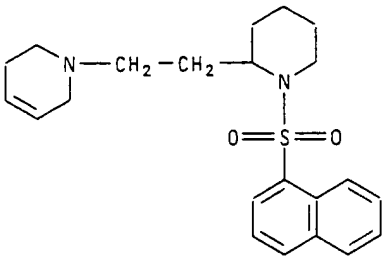
RN 201038-36-0 ZCAPLUS

CN Piperidine, 2-[2-(1,3-dihydro-2*H*-isoindol-2-yl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-37-1 ZCAPLUS

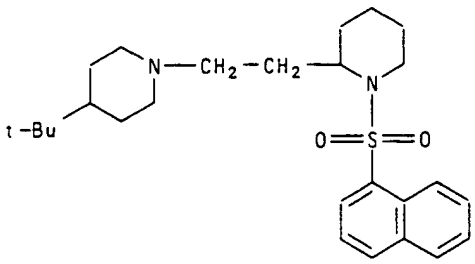
CN Piperidine, 2-[2-(3,6-dihydro-1(2*H*)-pyridinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-38-2 ZCAPLUS

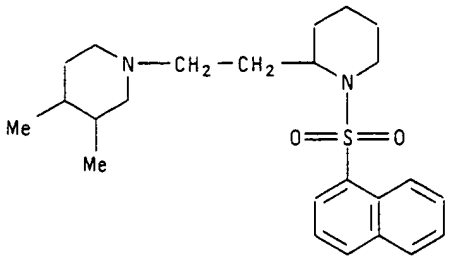
CN Piperidine, 2-[2-[4-(1,1-dimethylethyl)-1-piperidinyl]ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

RN 201038-38-2 ZCAPLUS



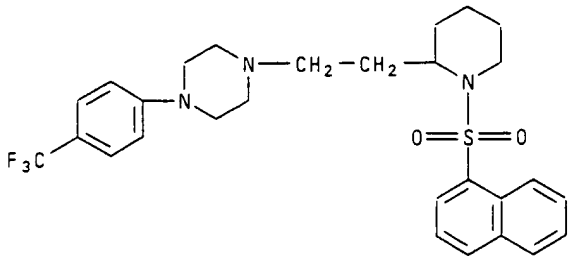
RN 201038-39-3 ZCAPLUS

CN Piperidine, 2-[2-(3,4-dimethyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-40-6 ZCAPLUS

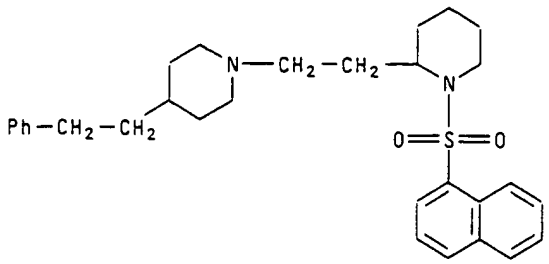
CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-[4-[4-(trifluoromethyl)phenyl]-1-piperazinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 201038-41-7 ZCAPLUS

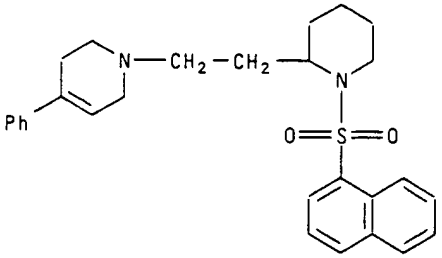
CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-[4-(2-phenylethyl)-1-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)

RN 201038-41-7 ZCAPLUS



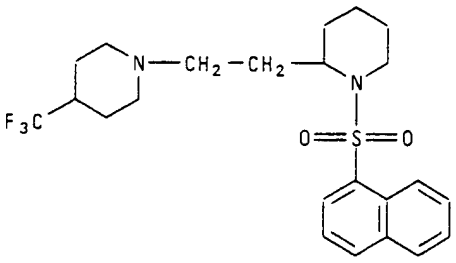
RN 201038-42-8 ZCAPLUS

CN Piperidine, 2-[2-(3,6-dihydro-4-phenyl-1(2*H*)-pyridinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-43-9 ZCAPLUS

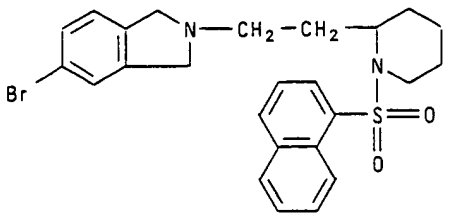
CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-[4-(trifluoromethyl)-1-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 201038-44-0 ZCAPLUS

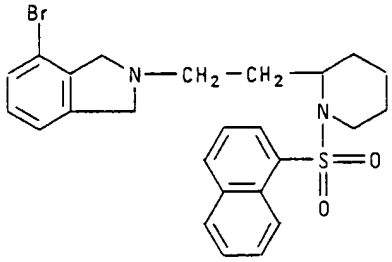
CN Piperidine, 2-[2-(5-bromo-1,3-dihydro-2*H*-isoindol-2-yl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

RN 201038-44-0 ZCAPLUS



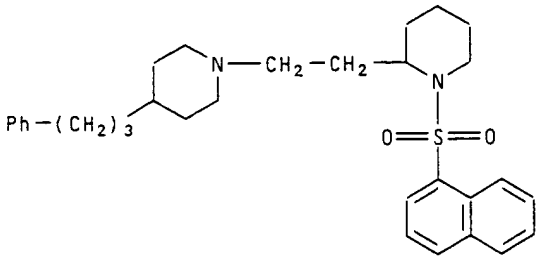
RN 201038-45-1 ZCAPLUS

CN Piperidine, 2-[2-(4-bromo-1,3-dihydro-2*H*-isoindol-2-yl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-46-2 ZCAPLUS

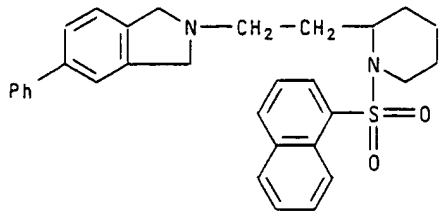
CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-[4-(3-phenylpropyl)-1-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 201038-47-3 ZCAPLUS

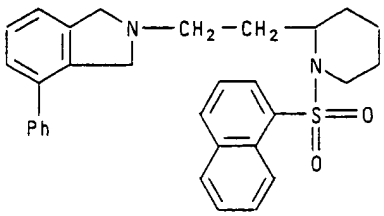
CN Piperidine, 2-[2-(1,3-dihydro-5-phenyl-2*H*-isoindol-2-yl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

RN 201038-47-3 ZCAPLUS



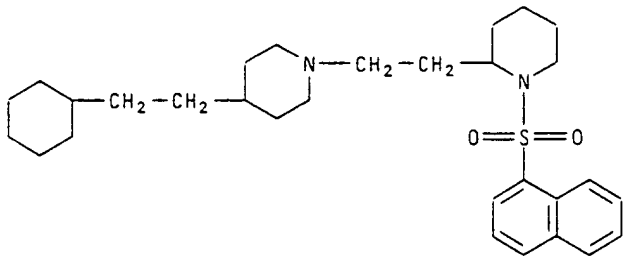
RN 201038-48-4 ZCAPLUS

CN Piperidine, 2-[2-(1,3-dihydro-4-phenyl-2*H*-isoindol-2-yl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-49-5 ZCAPLUS

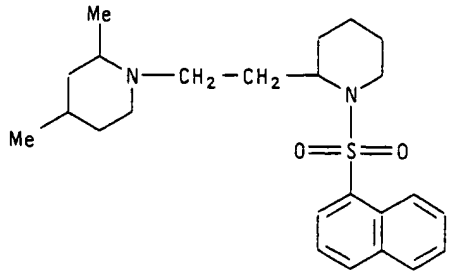
CN Piperidine, 2-[2-[4-(2-cyclohexylethyl)-1-piperidinyl]ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201038-50-8 ZCAPLUS

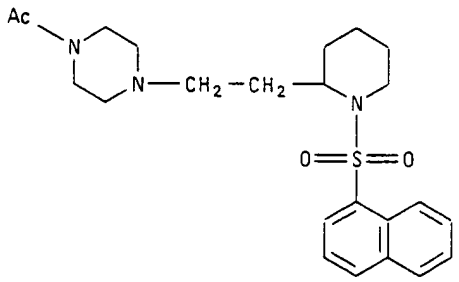
CN Piperidine, 2-[2-(2,4-dimethyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

RN 201038-50-8 ZCAPLUS



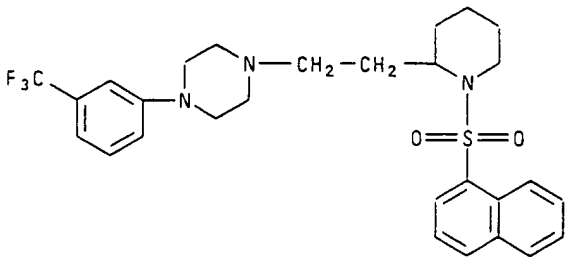
RN 201038-51-9 ZCAPLUS

CN Piperazine, 1-acetyl-4-[2-[1-(1-naphthalenylsulfonyl)-2-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 201038-52-0 ZCAPLUS

CN Piperidine, 1-(1-naphthalenylsulfonyl)-2-[2-[4-[3-(trifluoromethyl)phenyl]-1-piperazinyl]ethyl]- (9CI) (CA INDEX NAME)

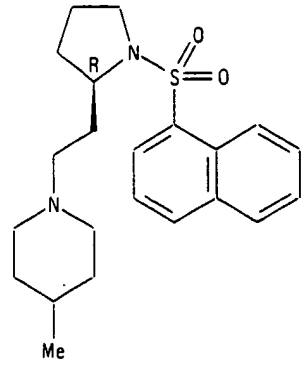


RN 201038-53-1 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

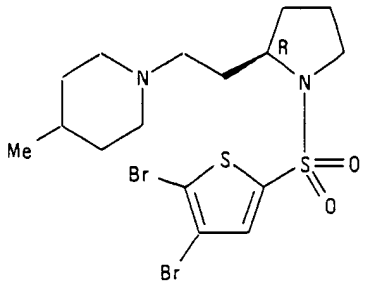
RN 201038-53-1 ZCAPLUS



RN 201038-54-2 ZCAPLUS

CN Pyrrolidine, 1-[(4,5-dibromo-2-thienyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

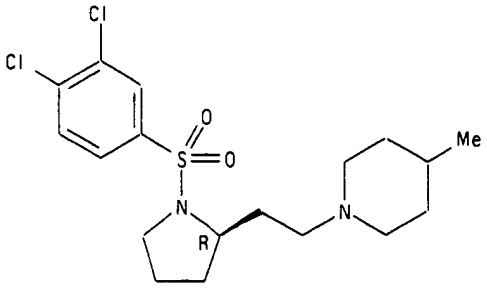
Absolute stereochemistry.



RN 201038-55-3 ZCAPLUS

CN Pyrrolidine, 1-[(3,4-dichlorophenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

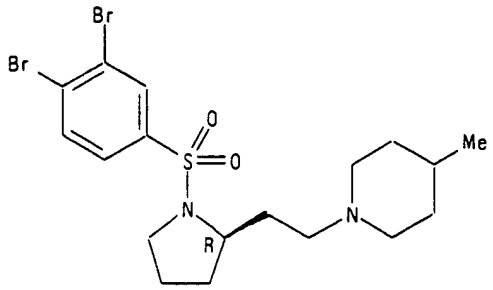


RN 201038-57-5 ZCAPLUS

RN 201038-57-5 ZCAPLUS

CN Pyrrolidine, 1-[(3,4-dibromophenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

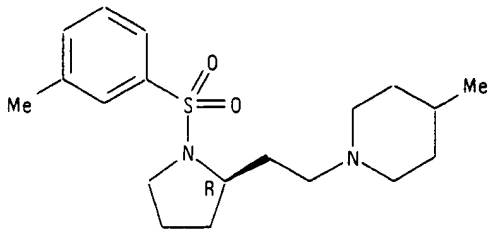
Absolute stereochemistry.



RN 201038-58-6 ZCAPLUS

CN Pyrrolidine, 1-[(3-methylphenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

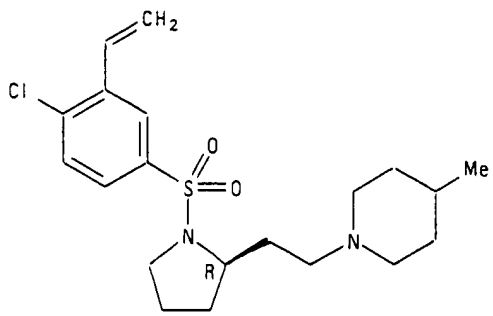
Absolute stereochemistry.



RN 201038-59-7 ZCAPLUS

CN Pyrrolidine, 1-[(4-chloro-3-ethenylphenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

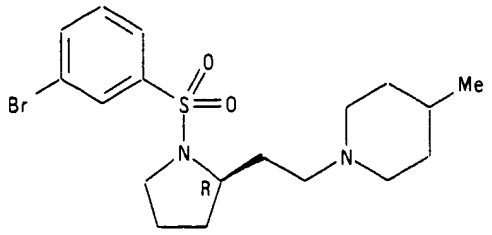


RN 201038-60-0 ZCAPLUS

RN 201038-60-0 ZCAPLUS

CN Pyrrolidine, 1-[(3-bromophenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

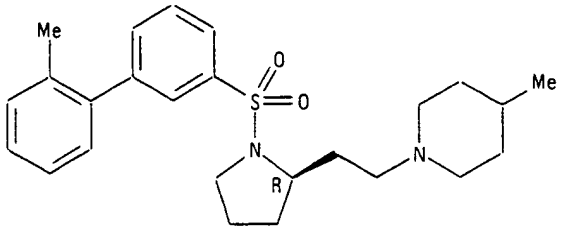
Absolute stereochemistry.



RN 201038-61-1 ZCAPLUS

CN Pyrrolidine, 1-[(2'-methyl[1,1'-biphenyl]-3-yl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

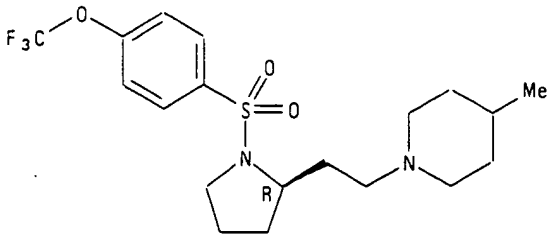
Absolute stereochemistry.



RN 201038-62-2 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-[[4-(trifluoromethoxy)phenyl]sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

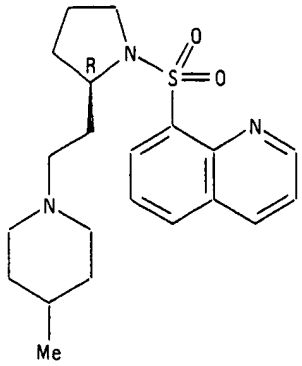


RN 201038-63-3 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-(8-quinolinylsulfonyl)-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

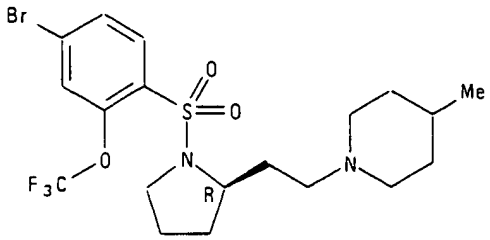
RN 201038-63-3 ZCAPLUS



RN 201038-64-4 ZCAPLUS

CN Pyrrolidine, 1-[[4-bromo-2-(trifluoromethoxy)phenyl]sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

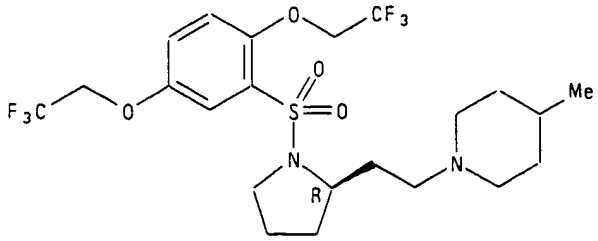
Absolute stereochemistry.



RN 201038-65-5 ZCAPLUS

CN Pyrrolidine, 1-[[2,5-bis(2,2,2-trifluoroethoxy)phenyl]sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

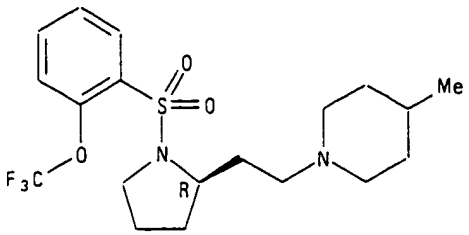


RN 201038-66-6 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-[[2-(trifluoromethoxy)phenyl]sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

RN 201038-66-6 ZCAPLUS

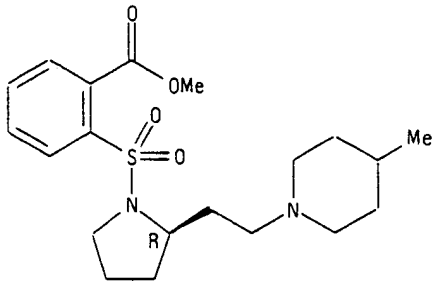
Absolute stereochemistry.



RN 201038-67-7 ZCAPLUS

CN Benzoic acid, 2-[[2-[2-(4-methyl-1-piperidinyl)ethyl]-1-pyrrolidinyl]sulfonyl]-, methyl ester, (*R*)- (9CI) (CA INDEX NAME)

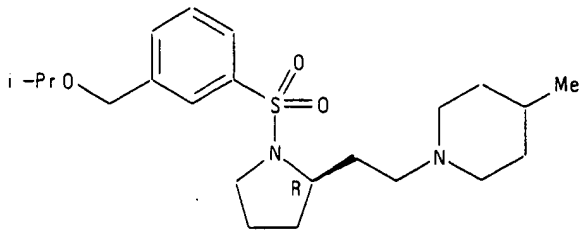
Absolute stereochemistry.



RN 201038-68-8 ZCAPLUS

CN Pyrrolidine, 1-[[3-[(1-methylethoxy)methyl]phenyl]sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

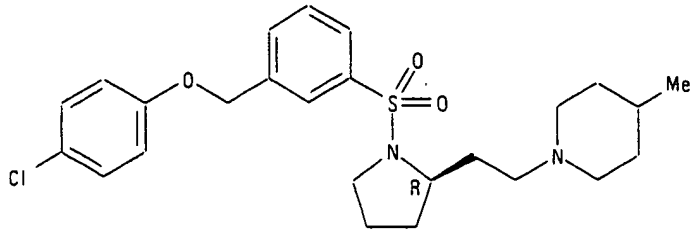


RN 201038-69-9 ZCAPLUS

CN Pyrrolidine, 1-[[3-[(4-chlorophenoxy)methyl]phenyl]sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

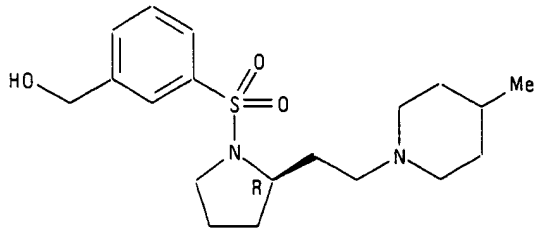
RN 201038-69-9 ZCAPLUS



RN 201038-70-2 ZCAPLUS

CN Pyrrolidine, 1-[[3-(hydroxymethyl)phenyl]sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

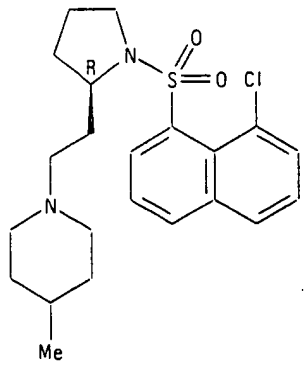
Absolute stereochemistry.



RN 201038-71-3 ZCAPLUS

CN Pyrrolidine, 1-[(8-chloro-1-naphthalenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

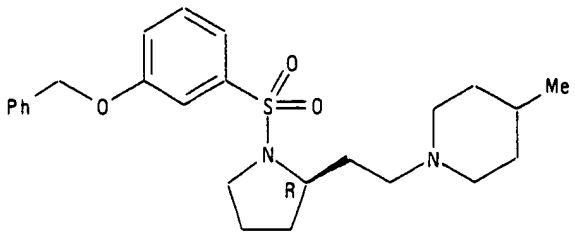


RN 201038-72-4 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-[[3-(phenylmethoxy)phenyl]sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

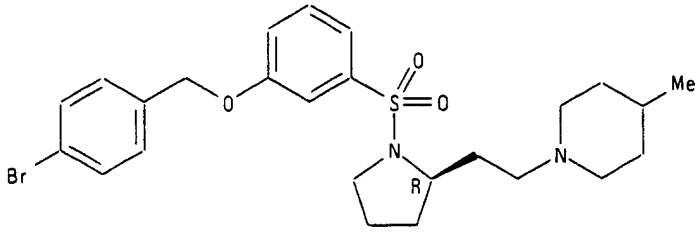
RN 201038-72-4 ZCAPLUS



RN 201038-73-5 ZCAPLUS

CN Pyrrolidine, 1-[[3-[(4-bromophenyl)methoxy]phenyl]sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

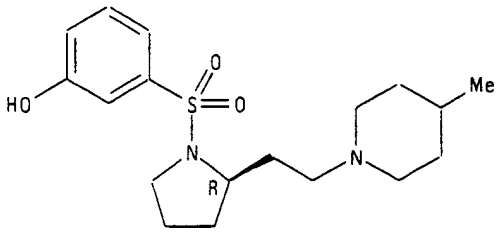
Absolute stereochemistry.



RN 201038-74-6 ZCAPLUS

CN Pyrrolidine, 1-[(3-hydroxyphenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

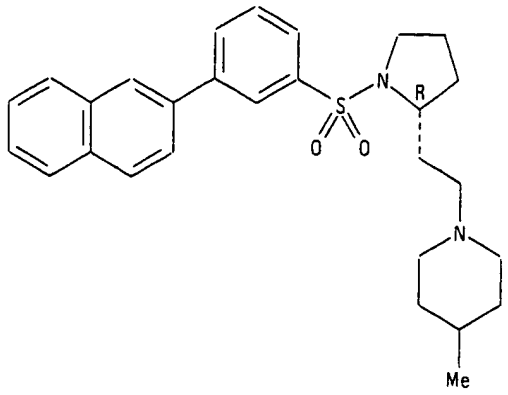


RN 201038-75-7 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-[[3-(2-naphthalenyl)phenyl]sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

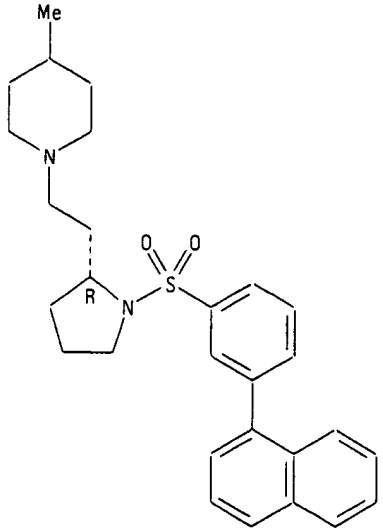
RN 201038-75-7 ZCAPLUS



RN 201038-76-8 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-[[3-(1-naphthalenyl)phenyl]sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

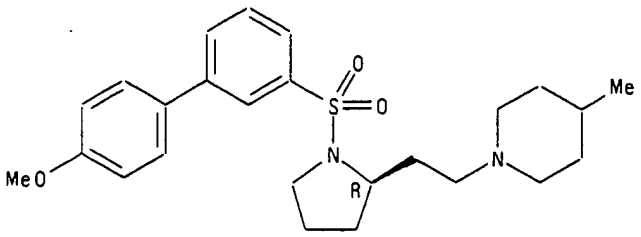


RN 201038-77-9 ZCAPLUS

CN Pyrrolidine, 1-[(4'-methoxy[1,1'-biphenyl]-3-yl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

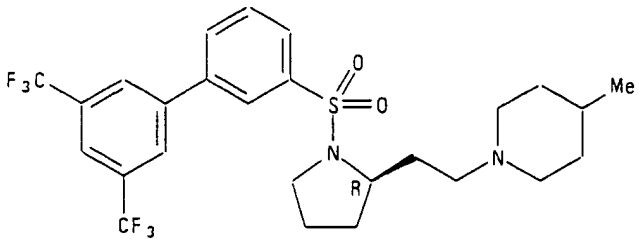
RN 201038-77-9 ZCAPLUS



RN 201038-78-0 ZCAPLUS

CN Pyrrolidine, 1-[[3',5'-bis(trifluoromethyl)[1,1'-biphenyl]-3-yl]sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

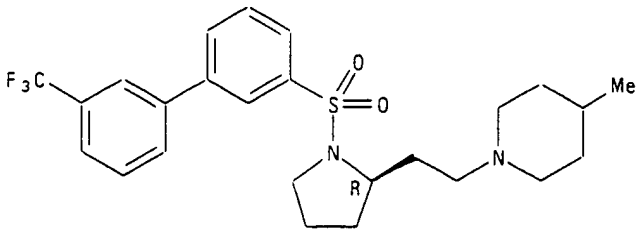
Absolute stereochemistry.



RN 201038-79-1 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-[[3'-(trifluoromethyl)[1,1'-biphenyl]-3-yl]sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

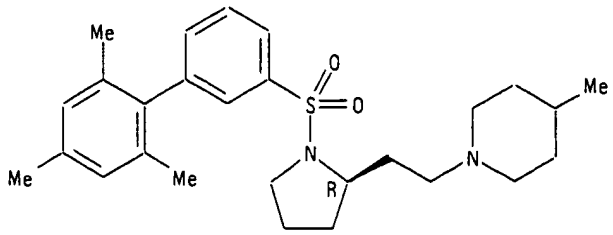


RN 201038-80-4 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-[(2',4',6'-trimethyl[1,1'-biphenyl]-3-yl)sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

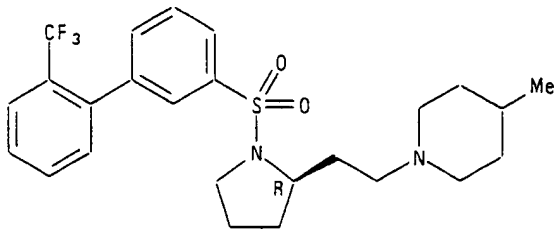
RN 201038-80-4 ZCAPLUS



RN 201038-81-5 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-[[2'-(trifluoromethyl)[1,1'-biphenyl]-3-yl]sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

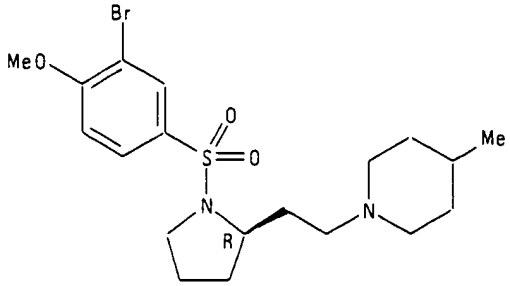
Absolute stereochemistry.



RN 201038-82-6 ZCAPLUS

CN Pyrrolidine, 1-[(3-bromo-4-methoxyphenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

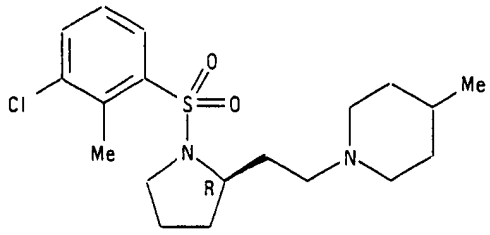


RN 201038-83-7 ZCAPLUS

CN Pyrrolidine, 1-[(3-chloro-2-methylphenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

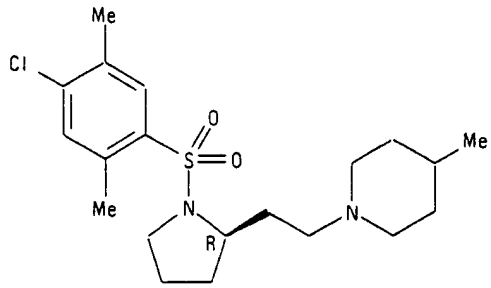
RN 201038-83-7 ZCAPLUS



RN 201038-84-8 ZCAPLUS

CN Pyrrolidine, 1-[(4-chloro-2,5-dimethylphenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

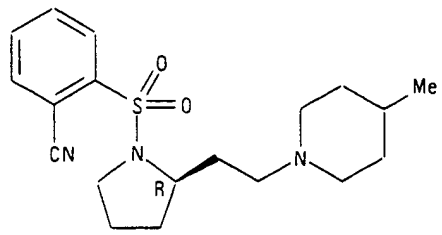
Absolute stereochemistry.



RN 201038-85-9 ZCAPLUS

CN Pyrrolidine, 1-[(2-cyanophenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

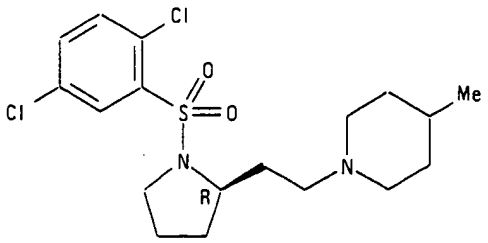


RN 201038-86-0 ZCAPLUS

CN Pyrrolidine, 1-[(2,5-dichlorophenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

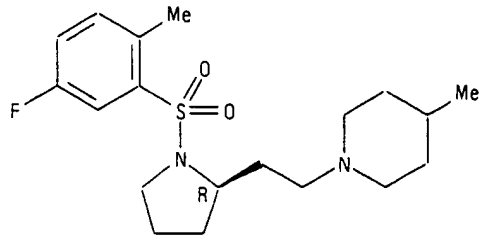
RN 201038-86-0 ZCAPLUS



RN 201038-87-1 ZCAPLUS

CN Pyrrolidine, 1-[(5-fluoro-2-methylphenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

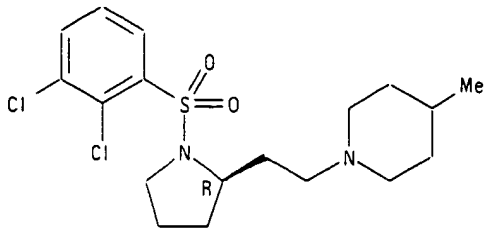
Absolute stereochemistry.



RN 201038-88-2 ZCAPLUS

CN Pyrrolidine, 1-[(2,3-dichlorophenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

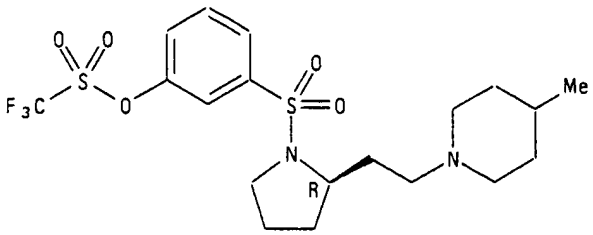


RN 201038-89-3 ZCAPLUS

CN Methanesulfonic acid, trifluoro-, 3-[[2-[2-(4-methyl-1-piperidinyl)ethyl]-1-pyrrolidinyl]sulfonyl]phenyl ester, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

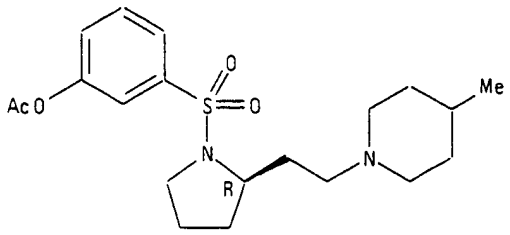
RN 201038-89-3 ZCAPLUS



RN 201038-90-6 ZCAPLUS

CN Pyrrolidine, 1-[[3-(acetyloxy)phenyl]sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

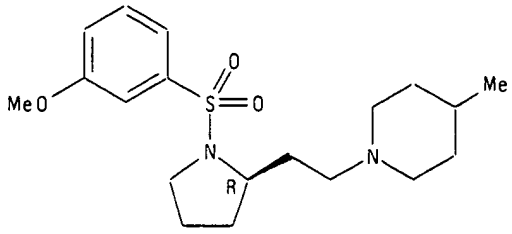
Absolute stereochemistry.



RN 201038-91-7 ZCAPLUS

CN Pyrrolidine, 1-[(3-methoxyphenyl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

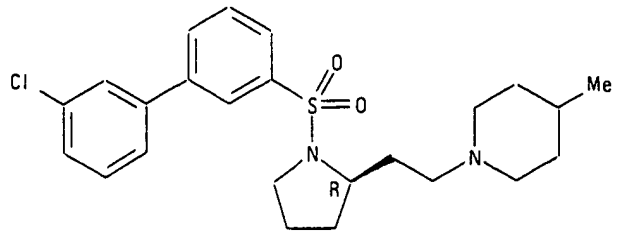


RN 201038-92-8 ZCAPLUS

CN Pyrrolidine, 1-[(3'-chloro[1,1'-biphenyl]-3-yl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

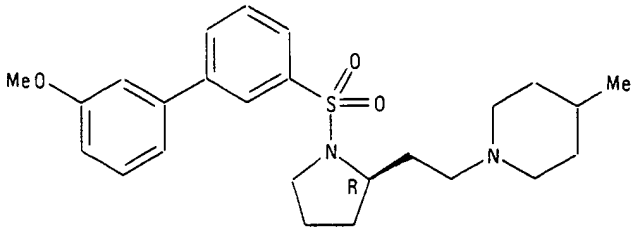
RN 201038-92-8 ZCAPLUS



RN 201038-93-9 ZCAPLUS

CN Pyrrolidine, 1-[(3'-methoxy[1,1'-biphenyl]-3-yl)sulfonyl]-2-[2-(4-methyl-1-piperidinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

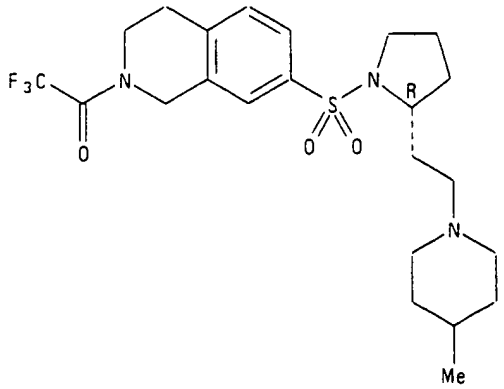
Absolute stereochemistry.



RN 201038-94-0 ZCAPLUS

CN Isoquinoline, 1,2,3,4-tetrahydro-7-[[2-[2-(4-methyl-1-piperidinyl)ethyl]-1-pyrrolidinyl]sulfonyl]-2-(trifluoroacetyl)-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

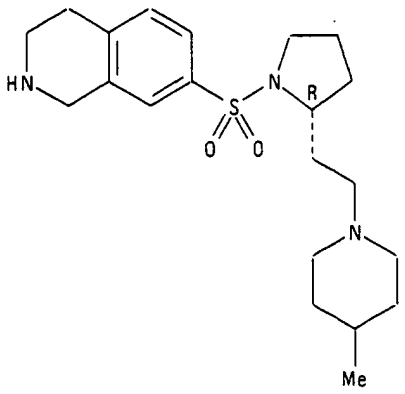


RN 201038-95-1 ZCAPLUS

RN 201038-95-1 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-[(1,2,3,4-tetrahydro-7-isoquinolinyl)sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

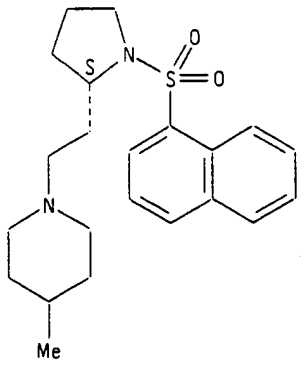
Absolute stereochemistry.



RN 201038-96-2 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)-, (*S*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

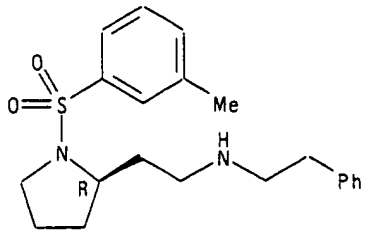


RN 201038-97-3 ZCAPLUS

CN 2-Pyrrolidineethanamine, 1-[(3-methylphenyl)sulfonyl]-*N*-(2-phenylethyl)-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

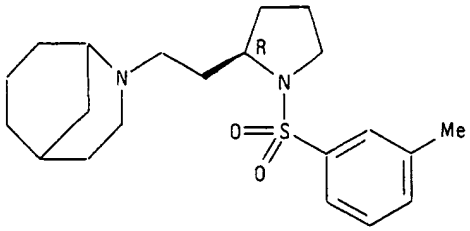
RN 201038-97-3 ZCAPLUS



RN 201038-98-4 ZCAPLUS

CN Pyrrolidine, 2-[2-(2-azabicyclo[3.3.1]non-2-yl)ethyl]-1-[(3-methylphenyl)sulfonyl]-, [2(*R*)]-[*partial*]- (9CI) (CA INDEX NAME)

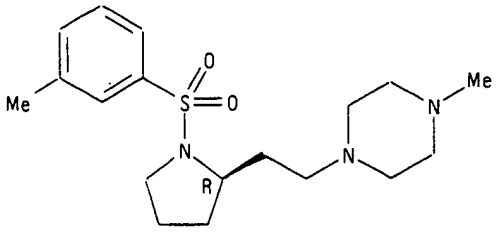
Absolute stereochemistry.



RN 201038-99-5 ZCAPLUS

CN Pyrrolidine, 1-[(3-methylphenyl)sulfonyl]-2-[2-(4-methyl-1-piperazinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

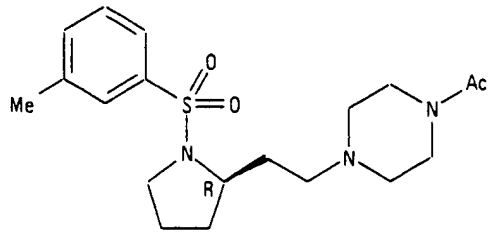


RN 201039-00-1 ZCAPLUS

CN Piperazine, 1-acetyl-4-[2-[1-[(3-methylphenyl)sulfonyl]-2-pyrrolidinyl]ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

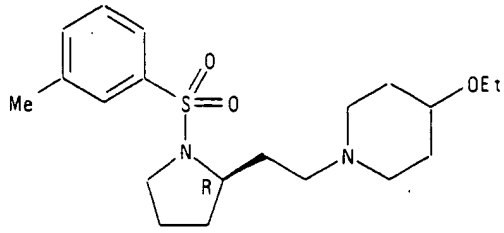
RN 201039-00-1 ZCAPLUS



RN 201039-01-2 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-ethoxy-1-piperidinyl)ethyl]-1-[(3-methylphenyl)sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

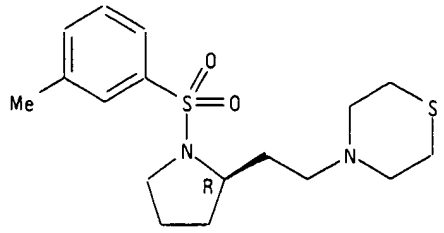
Absolute stereochemistry.



RN 201039-02-3 ZCAPLUS

CN Pyrrolidine, 1-[(3-methylphenyl)sulfonyl]-2-[2-(4-thiomorpholinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

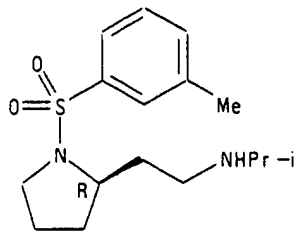


RN 201039-03-4 ZCAPLUS

CN 2-Pyrrolidineethanamine, *N*-(1-methylethyl)-1-[(3-methylphenyl)sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

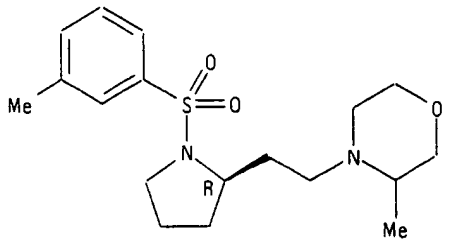
RN 201039-03-4 ZCAPLUS



RN 201039-04-5 ZCAPLUS

CN Pyrrolidine, 2-[2-(3-methyl-4-morpholinyl)ethyl]-1-[(3-methylphenyl)sulfonyl]-, [4(*R*)]- (9CI) (CA INDEX NAME)

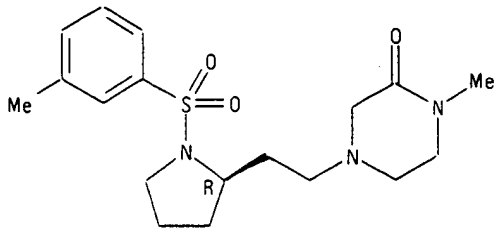
Absolute stereochemistry.



RN 201039-05-6 ZCAPLUS

CN Pyrrolidine, 2-[2-(4-methyl-3-oxo-1-piperazinyl)ethyl]-1-[(3-methylphenyl)sulfonyl]-, (*R*)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

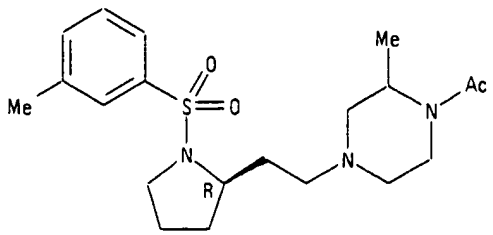


RN 201039-06-7 ZCAPLUS

CN Piperazine, 1-acetyl-2-methyl-4-[2-[1-[(3-methylphenyl)sulfonyl]-2-pyrrolidinyl]ethyl]-, [4(*R*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

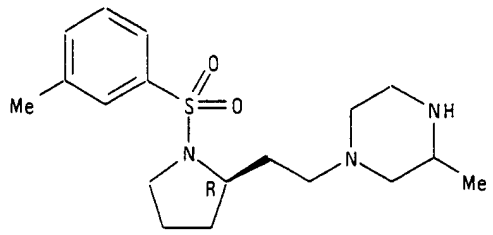
RN 201039-06-7 ZCAPLUS



RN 201039-07-8 ZCAPLUS

CN Pyrrolidine, 1-[(3-methylphenyl)sulfonyl]-2-[2-(3-methyl-1-piperazinyl)ethyl]-, [1(*R*)]- (9CI) (CA INDEX NAME)

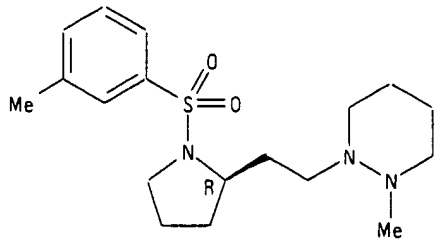
Absolute stereochemistry.



RN 201039-08-9 ZCAPLUS

CN Pyrrolidine, 1-[(3-methylphenyl)sulfonyl]-2-[2-(tetrahydro-2-methyl-1(2*H*)-pyridazinyl)ethyl]-, (*R*)- (9CI) (CA INDEX NAME)

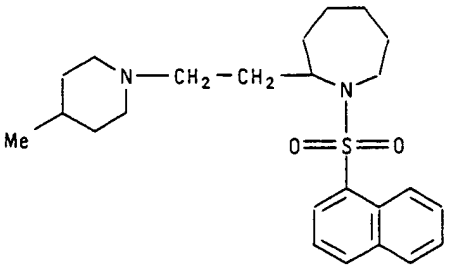
Absolute stereochemistry.



RN 201039-09-0 ZCAPLUS

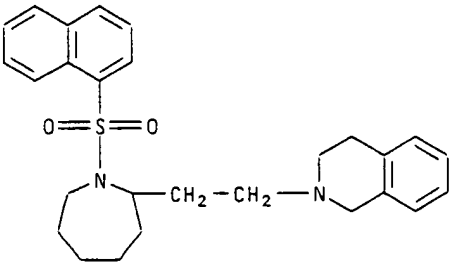
CN 1*H*-Azepine, hexahydro-2-[2-(4-methyl-1-piperidinyl)ethyl]-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)

RN 201039-09-0 ZCAPLUS



RN 201039-10-3 ZCAPLUS

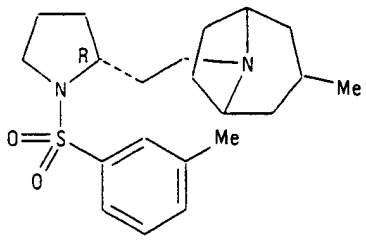
CN 1*H*-Azepine, 2-[2-(3,4-dihydro-2(1*H*)-isoquinolinyl)ethyl]hexahydro-1-(1-naphthalenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 201411-25-8 ZCAPLUS

CN Pyrrolidine, 2-[2-(3-methyl-8-azabicyclo[3.2.1]oct-8-yl)ethyl]-1-[(3-methylphenyl)sulfonyl]-, (2*R*)-[*partial*]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

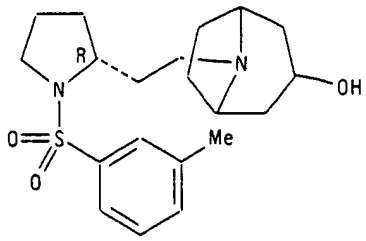


RN 201411-30-5 ZCAPLUS

CN Pyrrolidine, 2-[2-(3-hydroxy-8-azabicyclo[3.2.1]oct-8-yl)ethyl]-1-[(3-methylphenyl)sulfonyl]-, (2*R*)-[*partial*]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 201411-30-5 ZCAPLUS



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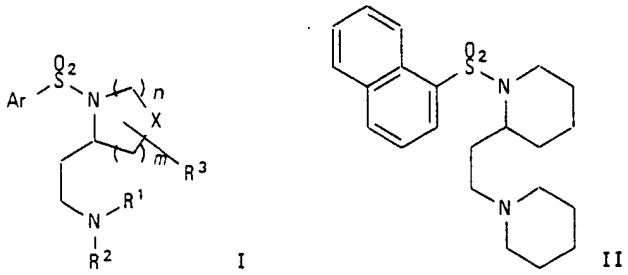

AB Sulfonamide compds. I and their salts are disclosed [wherein Ar = (un)substituted mono- or bicyclic arom. or heteroarom. ring; R^1, R^2 = H, C_{1-6} alkyl, aryl-C_{1-6}-alkyl; or NR^1R^2 = (un)substituted 5- to 7-membered heterocyclic ring optionally contg. a further heteroatom selected from N, S, or O, with the N atom being substituted by H, C_{1-6} alkyl, C_{3-7} cycloalkyl, or (un)substituted aryl, heteroaryl or aryl-C_{1-6}-alkyl; R^3 = H, C_{1-6} alkyl; X = O, S, or bond; n = 2 or 3; m = 1 or 2]. The compds. are useful for treating anxiety, depression, sleep disorders, and schizophrenia, by virtue of being 5-HT_7 receptor antagonists. Also disclosed are processes for prepn. of the compds., compns. contg. them, and their use in the treatment of CNS disorders. Over 100 examples are given. For instance, sulfonamidation of 2-[2-(1-piperidinyl)ethyl]piperidine with 1-naphthalenesulfonyl chloride in CH_2Cl_2 in the presence of Et_3N gave 58% title compd. II. In a test for displacement of [^{3}H]-5-carboxamidotryptamine from human 5-HT_7 receptor clones in a cell culture, all prepd. compds. I showed activity at concns. of 10^{-5} to 10^{-11} M.

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